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ABSTRACT

Competency-based instruction provides the mechanism necessary to implement the democratic and humanitarian philosophies espoused by community colleges. This document discusses the need for competency-based instruction, identifies instructional methods, and provides insights into the curricular ends of this type of instruction. An instructional methodology for competency-based instruction is presented in a five-phase model involving: (1) analysis of course requirements; (2) development of objectives; (3) preparation of instruction; (4) presentation of instruction; (5) evaluation and validation. These five phases are dynamically linked by feedback. Next, procedures for deciding what competencies ought to be acquired are identified. Finally, five advantages of competency-based instruction are discussed, including: (1) humanism; (2) developing student personhood; (3) accomodating the adult learner; (4) providing equality of educational opportunity; and (5) providing educational accountability. (NHH)

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**Time As the Variable,
Achievement As the Constant:
Competency-Based Instruction
in the Community College**

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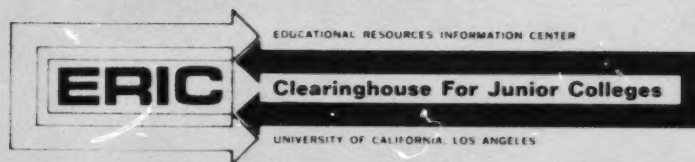
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**American Association of Community and Junior Colleges/
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Austin, Texas
December, 1975

CHAPTER 1 OPENING THE DOOR

Learning is change in behavior and can be prescribed, produced, and guaranteed like any other product. It is now possible to specify the desired performances of learners and arrange the circumstances of learning such that those performances will be developed and exhibited by the learners. The behavioral products, explicitly delineated in advance, can and should be guaranteed (Fraley and Vargas, 1975, p. 2).

The contemporary community college is a unique American institution that evolved from nineteenth century educational innovations. Sometimes called "democracy's college," it is not a subordinate form of classical higher education but rather originated in, and continues to hinge upon, societal demands to fulfill the broad educational needs ignored by narrow, academically oriented traditional institutions.

The community college movement is marked by an egalitarian philosophy, a social focus, and a practical style. It is committed to the ideals that universal higher education rightfully should be available to anyone who can profit from it and that education should be accessible to all people through "open door" admissions. Situated within commuting distance of potential students, charging modest fees, and practicing honest open-admissions policies, community colleges are in a unique position to answer demands for greater educational opportunity by removing barriers to education. Their role in developing the competence of citizens through competency-based instruction is vital to the nation's political, social, economic, and cultural welfare.

Modern society daily grows more technological and complex while demands for trained manpower become ever more insistent. Although the need for unskilled workers is dwindling, the nation has become so highly developed that it cannot afford to waste human resources. Postsecondary education for all of our population is a pressing national need that has not been met by selective and elitist-oriented senior colleges and universities. "Democracy's college" is called to perform its familiar role of meeting societal demands for greater educational opportunity for all citizens.

THE CHALLENGE

Although community colleges have great potential for responding to national educational needs, their performance to date falls short of expectations. Equal opportunity in the community college still means the least to those for whom it should mean the most. Under an open-door policy any person who graduated from high school or who is at least eighteen years of age and seems capable of benefiting from instruction is eligible for admission. The resultant student body is often an extremely diverse group drawn from the lower two-thirds of the socio-economic spectrum. Many students are disadvantaged to the degree that their backgrounds have failed to provide the cultural and educational experiences generally found in the young people that colleges are accustomed to teaching. A significant percentage of disadvantaged, low-aptitude students in a student body creates problems that may require drastic modifications in traditional instructional techniques and curricula.

Faced with these problems, very few community colleges have been faithful to the implied promise of the open door. Typical attrition rates are alarming, as are student failure and incomplete rates. Commonly accepted instructional methods and procedures need improvement if the concern for student growth and development (learning) implicit in the promise of the open door is to be realized.

Colleges practicing an open-admissions policy are only now beginning to change instructional methods. On the whole teaching is still organized and learning measured in terms of the fifty-minute lecture, the textbook, the term paper and written test, semester-hours of credit, and gradepoint averages. Student performance is still judged by antiquated methods, such as norm-referenced testing (comparing students against each other) and curve-based grading, despite the fact that these traditional standards assume from the start that all will not succeed (Cohen, 1969, p. 86).

The obvious deficiencies of many community college programs are particularly disturbing when they are also viewed as failures to fulfill the promises implicit in the open door. Attrition and failure rates are not sterile statistics. They reflect the extinguished hopes of disadvantaged students who believed that the open door offered them a chance.

THE NEED FOR INSTRUCTIONAL CHANGE

Educational concepts and values change with glacial slowness in institutions of higher learning. Yet the paucity of effective

community college programs is inspiring a few colleges to seek new approaches aimed at accommodating individual differences in students.

Faculty members are seldom prepared by graduate institutions in accordance with the unique philosophy of the community college. They have been narrowly oriented and academically inclined, viewing teaching in terms of fixed content to be learned. Our graduate schools have given these teachers an intensive subject-matter specialization but seldom those skills needed to apply content and motivate uninspired learners. Furthermore, some instructors do not agree with the philosophy or the admissions policy of the community college movement. These misplaced faculty members fail to understand that an instructor is worth only as much as he contributes to the purposes of the institution.

Similarly, community college administrators and trustees have difficulty in perceiving and relating to student and community needs in substantive ways. Major changes in the responses of instructors, administrators, and governance officials are required if the open door is to become a fact rather than a slogan.

The extreme diversity of student characteristics is the key factor signaling the need for instructional change. Postsecondary education can no longer be geared to selected student bodies. While we welcome all, we have only scratched the surface in our efforts to truly educate all. K. Patricia Cross presents a powerful rationale for change: "As soon as colleges forego the luxury of selecting students to fit colleges, they take on the obligation of designing colleges to fit students" (1973, p. 1).

In designing community colleges to fit students our first consideration must be the individual differences of students. Individuals vary in many ways. Some of the more important dimensions are:

- Abilities—verbal, numerical, and motor, for example
- Personal characteristics—interests, goals (career or educational), personality, self-concept
- Learning characteristics—rate, style, motivation, and so on

Historically, three basic patterns of adapting to individual differences in students have been practiced (Glaser, 1969, p. 169). Fixed and inflexible goals and methods for all students characterize the first pattern. Individual differences are taken into account by allowing students to progress as far as their aptitude (defined here as the capacity to learn) permits and by dropping them along the way as

they reach the limits of their potential—a weeding-out (or “cooling out”) process.

In the second pattern, the student's future role is determined by testing, and he is then channeled into the appropriate curriculum to prepare him for his role. Vocational and academic tracking is thus the means of implementation. The system provides for optional educational goals, but within each track the instructional methods are relatively fixed.

The third pattern is one which has recently become more in evidence in American education, especially in community colleges. It provides a number of instructional modes and gives students various opportunities to help choose their own educational goals. The first step is to diagnose all the student characteristics listed above (abilities, personal characteristics, and learning variables) which are important to curriculum and instruction design. The educational program for each student is then tailored to meet his own needs. Competency-based instruction utilizes this third pattern.

The simple recognition of individual learning differences poses serious challenges to the usual “group instruction.” There is *no* single teaching method or style best suited to all students. The commonly used lecture/textbook/discussion method may accommodate the highly motivated and verbally competent students; and surely the college has an obligation to provide instruction that will best serve those particular students. But the college is also obligated to provide learning strategies for the poorly motivated student who is weak or deficient in verbal skills. It is this responsibility that beckons the college instructor to critically evaluate his own instructional design, his own delivery system, in order to promote competency in all his students, despite their learning differences.

ELEMENTS OF COMPETENCY-BASED INSTRUCTION

In the two-year college today there is a trend toward setting broader goals than those pursued in the past. The adoption of these wider aims, coupled with accelerated demands for formulating course and program objectives that are specific and measurable, results in part from the taxpayers' desire to hold accountable the institutions, institutional leaders, instructors, and students who are spending their money.

In response to the accountability demand, there has been a proliferation of innovations in institutional management, curriculum, and instruction. Perhaps the most important of these is the concept of competency-based instruction.

Segments of higher education have attempted competency-based instruction in the past. Law school graduates must pass bar examinations. Engineers must score at a preselected level on qualifying examinations to be authorized to practice in a given state. Nurses are required to pass state board exams. Only recently, however, have we begun to look for the tools to certify the competence, at some level, of the graduates of career programs, parallel college-transfer programs, and developmental programs.

In some ways competency-based education may differ little from the traditional means of certifying individuals as competent. But the modes and purposes of instruction assume a new posture. The intent of competency-based education is to ensure mastery of a given instructional program. Oriented toward success rather than failure, it guarantees that most of the students entering a program will attain a specified level of skill. The designers of a particular program do not decide which students have attained sufficient competency in the program in a fixed period of time; instead they believe their task is to cause each student to attain preestablished levels of knowledge and skills by allowing sufficient time for mastery to occur. Mastery learning, not a sorting process, is the focus of instruction. Time is a variable—achievement is the constant.

DEFINITIONS

A competency-based instructional program is designed explicitly to give students the learning experiences that will equip them with the knowledge, skills, and attitudes specified as outcomes by the program designers.

Further, it requires students to demonstrate in class the kinds of skills, knowledges, and other abilities that are likely to be required of them at some later time: in a subsequent course of instruction or on the job following program completion.

The designers of this type of instruction focus primarily on tailored outcomes and learning experiences that approximate the world beyond the classroom. Emphasis is placed on evaluation, since the program is successfully completed when, and only when, the student is able to demonstrate that he possesses the knowledge, skills, and attitudes by mastering performance or written tests.

What distinguishes competency-based from traditional instruction is that the former designs courses which are systematically linked together by a family of observable skills and creates programs which are more specific and explicit. In this system the competencies expected of students upon exit from any instructional program are agreed upon in advance, they provide a firm foundation for the

next program of instruction or for job performance, and the learning activities and related instructional strategies are designed to help the student acquire and demonstrate the specific competencies.

Chapter Two presents a competency-based instructional paradigm of proven effectiveness. A glossary of terms and definitions related to competency-based instruction is attached.

CHAPTER 2

INSTRUCTIONAL DECISION MAKING: HOW COMPETENCIES SHOULD BE TAUGHT

Any instructor must decide both what should be taught and how should it be taught. This chapter takes up the How and leaves the What to Chapter Three.

Every teacher has a "system" that guides his instruction. Most employ a two-component system consisting of learning activities (going to class, listening to lectures, taking notes, reading texts and outside materials, engaging in laboratory work and so on) and examinations. Students repeat the cycle (new learning activities and additional testing) until all the content supposed to be covered in the semester is completed. Students are then assigned grades in a relative fashion based on test-score averaging and other criteria. The distribution of grades usually approximates a normal curve. This two-component system is essentially a failure-oriented strategy, since it assumes that only a few students will do well.

This model has not served education well. Consider this statement by an individual who went into debt in hopes of improving his station in life:

I am presently working as a janitor. One day while I was watching Dialing for Dollars on television, I saw X School's ad. I telephone the school and they convinced me to come down right away. The program sounded really good. I felt that it would be impossible for me not to get a job if I took the course.

The counselor showed me around and I took a test which I didn't pass. I really wanted to go to the school and so the counselor said if I brought in fifty dollars and really wanted to go, I should bring the money in the next day and they would let me enroll. The counselor told me that they would have plenty of jobs when I got out. . . .

I took the whole course and only missed a few days. The course lasted three and a half months. The

training I received didn't go very deep into computers. We learned the basics that were supposed to make you capable of running all types of computers. We learned a little bit about every part of the computers as well as the history of computers. I couldn't understand how the history of computers would help me get a job. . . .

After I graduated, the school did not make any real effort to help me find a job. I believe they only got me one interview or maybe none. I arranged interviews on my own with companies like Standard Oil and the Telephone Company and some others. At these interviews I was told I would have to start as a delivery boy and move up slowly. . . . These companies said they did not want X School graduates. They refused me and everyone else from the school.

I paid for this training with a Federally Insured Student Loan. The course was around nine hundred and eighty dollars. Since I can't get a job, I have stopped paying on my student loan. The government has tried to garnishee my wages. . . .

I don't feel like I should have to pay for training that I cannot use. I would never have taken this course if I had known there was any possibility at all of me not being able to get a job when I got out.

-Federal Trade Commission Transcript of a student's explanation of why he refuses to repay his student loan

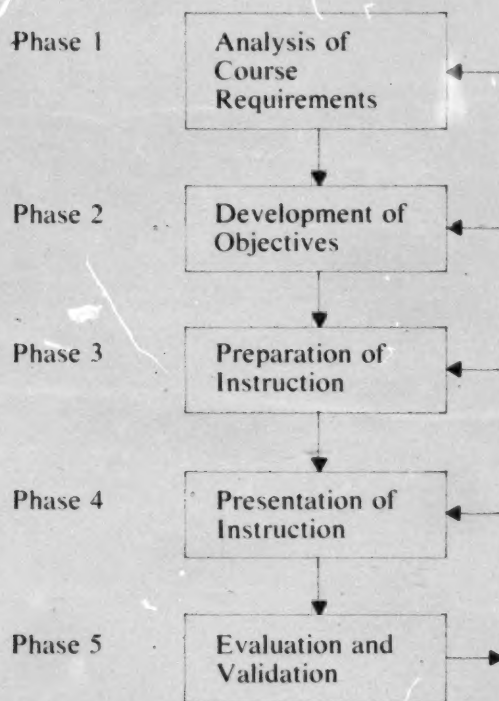
A system conceptualized and designed to overcome the situation documented above is the competency-based instructional paradigm. It is characterized by the following identifiable features:

1. An analysis of course requirements must be based on inputs from several sources both within and outside the institution.
2. Performance objectives must be realistic conversions of observable behavior that would be visible in subsequent educational experience or in the world of work.
3. Students are informed in advance about the performance expectations of instructors so that learning is perceived as a cooperative rather than a competitive enterprise.
4. Standards of mastery are preselected, and an individual's achievement level is determined by how well he meets those standards.

5. A short diagnostic and progress test for each instructional sequence is employed to check progress and to improve the system.
6. Students must be given immediate feedback about their performance on diagnostic and progress tests in order to increase retention and transfer of learning.
7. Instructors must analyze diagnostic data for the purpose of providing feedback to students and improving instruction and not specifically in order to evaluate students.
8. Alternative learning experiences must be prescribed for those students who do not demonstrate mastery.

The model shown in Figure 1 groups instructional decisions into five phases. The phases are dynamically linked by feedback

Figure 1. Model of Competency-Based Instruction



lines in order to demonstrate the cyclical nature of the process. These are convenience groupings to aid in understanding; in actual course design there are many substeps, each of which is important to the whole program. Space limitations do not permit detailed analysis of each step; however, in order to improve their visibility, the major inputs and outputs involved in each phase will be discussed.

ANALYSIS OF COURSE REQUIREMENTS

Figure 2 provides a partial listing of the potential inputs available to course designers and members of a design team or instructional department.

Although each instructional program within a college or institute will develop and justify unique analysis procedures, the initial product of analysis is always a task list. For example, if one were trying to develop a task list for a teacher-training program, some of the tasks might be:

PREPARES LESSON PLANS

- Analyzes learning outcomes
- Arranges instructional content in its proper sequence
- Selects instructional strategies
- Preassesses instruction
- Documents instruction

CONDUCTS FORMAL INSTRUCTION

- Develops instructional rationale
- Coordinates student learning
- Provides practice during instruction

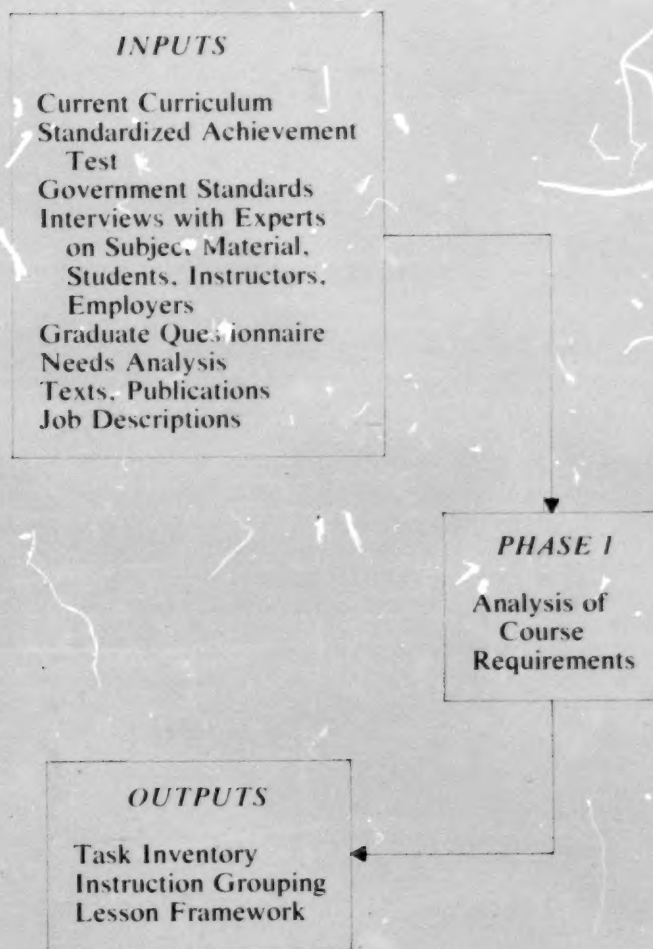
EVALUATES INSTRUCTION

- Prepares diagnostic test
- Prepares lesson posttest
- Prepares unit exams
- Prepares course exams
- Analyzes test data

REVISES INSTRUCTION

- Determines inadequate instruction
- Analyzes learner difficulties
- Redesigns instruction as necessary
- Documents revision plans

Figure 2. Analyzing Course Requirements



The task inventory for a given program must not be conceived as a fixed document. It must constantly be open to scrutiny, questioning by the instructional staff, and revision by those responsible for keeping it current. The list should be perceived as containing fallible, judgmental preferences—only in this way will it be considered dynamic and changing. At best, the inventory

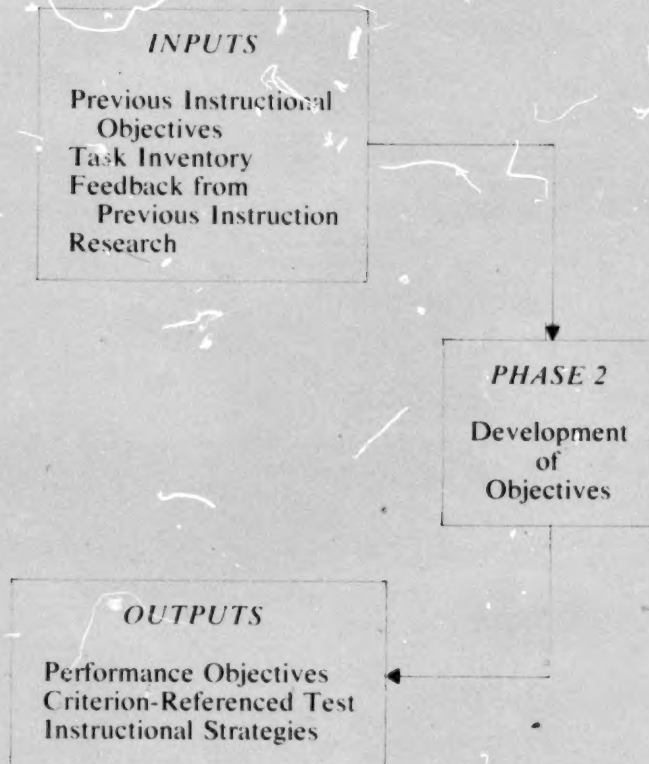
expresses the current best estimate of what the graduate should be able to do in subsequent programs or on the job.

When the list is completed, the items that should be taught in a given program are converted into performance objectives. These particular skills, concepts, and attitudes are the learning requirements of the instructional program.

DEVELOPMENT OF OBJECTIVES

Figure 3 demonstrates the criteria that the program designer must consider in developing the aims of instruction. The blend of inputs

Figure 3. Developing Objectives



emphasizes the outputs of the previous step in instructional development. Other sources are the objectives that have previously been used and current research on the subject to be taught. This step yields performance objectives, a criterion-referenced test, and instructional strategies.

Performance objectives focus on the outcomes rather than on the processes and are stated in precise terms that are not subject to interpretation. The following steps are suggested in developing performance objectives:

1. Identify the desired outcomes of instruction. Example: a unified composition.
2. Describe the behavior that evidences outcome attainment. Example: Write a unified composition in acceptable English on any assigned subject.
3. Describe the conditions under which the behavior occurs. Example: The composition will be written in one hour, in class, and with the use of a standard dictionary.
4. Describe the criteria for successful performance. Example: The composition will exhibit no spelling errors and no major structural problems, will contain at least one thousand words, and will be in accord with an evaluation list previously distributed.

Each performance objective includes a behavior that is capable of being assessed, a condition statement, and a criterion statement. Criterion-referenced test items will be written to be compatible with the accompanying learning objectives in terms of behavior, conditions, and performance criteria.

The utmost care must be given to the development of objectives. They are the heart of competency-based instruction and their influence pervades every phase of it. In addition to the characteristics that were listed above, performance objectives have the following essential aspects.

1. They are derived from the analysis of course requirements. Precise identification of such requirements is a key to effective instruction. Primary emphasis must be given to those performances, tasks, skills, and concepts that have not already been mastered by most of the students. A careful task analysis and a thoughtful set of decision rules will preclude teaching those subjects for which no strong rationale exists and will focus attention, time and resources on those areas where they are needed.

2. They are used to evaluate students and the validity of the instructional program. Since the objectives state what graduates will

be expected to do after instruction that was quite impossible before instruction, a competency-based instructional system obviously must ascertain whether or not the graduate has mastered *X* quantity of *X* quality. Thus, the continuing task of the instructional development team must be the evaluation of every performance objective.

Evaluation may take two forms: formative and summative. Essentially, formative evaluation consists of frequent, ungraded requirements intended to help the learner pinpoint how well he has mastered particular learning tasks. It shows the learner who exhibits some deficiency just what he should learn in order to move toward full mastery. Additionally, this type of diagnostic, check-up test permits the instructor to modify the instructional program and to manage remediation where necessary. Summative evaluation, by contrast, is usually graded and is a general assessment of the degree to which outcomes have been attained in some substantial part of the course.

3. Objectives are made known to students in advance of instruction. Foreknowledge of objectives directs the student to relevant subject matter and gives him a structure for organizing diverse information. In addition, objectives help the student to allocate time and allow him to move on to new tasks with confidence as he assesses his progress in terms of the criteria or standards stated in the performance objectives.

Although class standings may be vague in some cases or actually required by regulation in others, it is not the fundamental purpose of instruction to rank students, but rather to ensure that as many students as possible master the maximum number of instructional objectives.

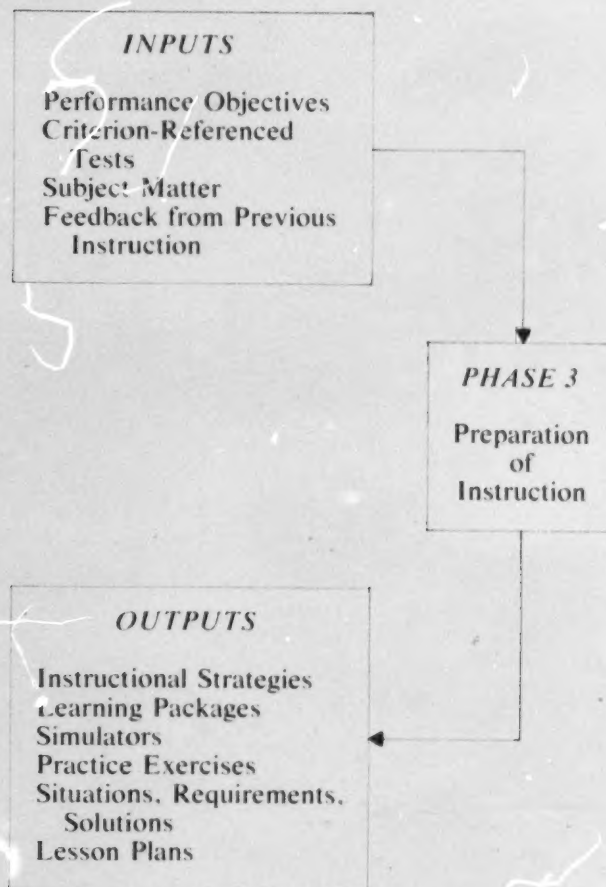
4. The responsibility for attaining objectives rests not solely, or even primarily, with the student. It must be shared by the program designers, instructors, support personnel, college leaders, and others involved in the total educational process. In this regard, agencies external to the college should have many opportunities for making suggestions and recommendations. The formation of course requirements and the creation of performance objectives must not be done in isolation.

PREPARATION OF INSTRUCTION

The principal task of the program designer is to provide a variety of learning modes and to respond creatively to the needs of

each student (see Figure 4). The instructor may initiate a competency-based program by developing individualized learning packages. Simultaneously, he will want to build in such learning activities as field trips, small-group discussions, tutoring, and individual projects. Individual packages may be placed on audio tapes. Color slide sequences may be developed and instructional television may provide an excellent medium. For students who can profit from, and prefer, traditional lectures, those learning activities

Figure 4. Preparing for Instruction



should be provided—with objectives clearly stated to include the conditions of evaluation and the expected performance levels.

Although the instructor is likely to provide a variety of material for his students to choose from, he must be aware that he is still the most flexible and responsive resource available to the learner. He is the one who tries to analyze the students' learning styles and then design performance objectives to suit them. The correct prescription for teaching particular students may be one-on-one tutoring, small-group instruction, or a full-class lecture. Whatever the method, the instructor's guiding principle is that students learn best by doing. Thus he encourages their active involvement, allowing them to generate other strategies that they believe will lead to mastery. This participation in the teaching-learning process is critical where diversity is the most common characteristic among students.

Teaching has been defined as doing whatever is necessary to help students acquire the desired competencies (Deterline, 1968). If this is true, then teachers who truly believe that competency-based instruction is the foundation of accountability will gather empirical evidence concerning these instructional strategies, media, learning packages, and the like that produce desired learning.

The advocate of competency-based instruction would accomplish the following tasks in preparing for instruction:

1. Ensure that subject-matter research remains a central activity.
2. Coordinate with both internal and external agencies (accrediting groups, National League for Nursing, for example) for changes in technique, procedure, equipment related to the subject matter field.
3. Formalize and document decisions about organizing learning activities and arranging them in sequence.
4. Prepare appropriate instructional material.
5. Try out learning packages on a small number of students.
6. Revise instruction to improve task attainment.

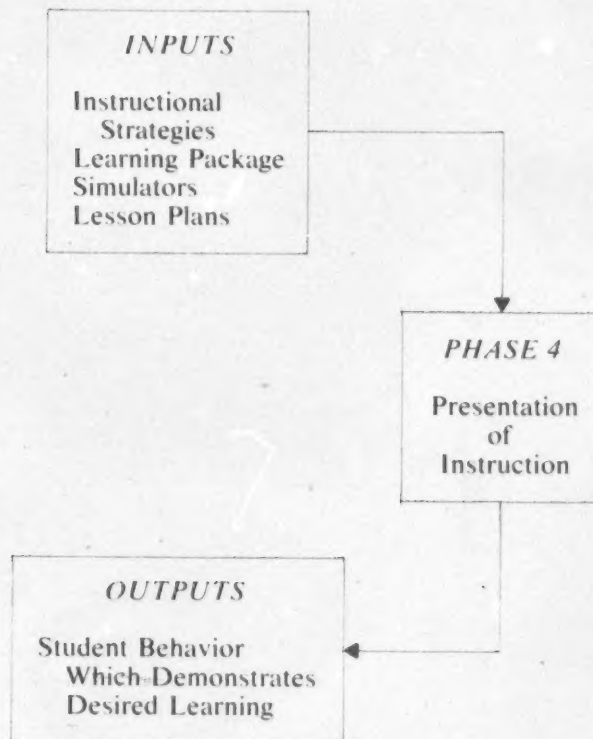
The dedicated competency-based instructor will keep these goals central in the course development effort:

1. The organization of instruction must focus on the attainment of performance objectives, and trivial (and often cherished) material must be deleted.

2. To the maximum extent possible, learning activities must be selected and designed to give students opportunities to apply the main teaching points.
3. A variety of media and instructional strategies must be planned and validated in order to accommodate a wide range of student learning rates and styles and to motivate students to remain involved until mastery occurs.
4. The instructor will be constantly alert to capitalize on any internal or external asset that will improve student performance.

PRESENTATION OF INSTRUCTION

Figure 5. Presenting Instruction



Knowledgeable instructors are aware that the student is likely to perceive his interaction with the instruction as the *Total* system. Accordingly there is a natural tendency for the instructor to see himself as a performer and to see instruction as instructor-centered rather than student-centered. This traditional attitude must be resisted, since it is virtually impossible to achieve the goals of a competency-based model unless the student is viewed as, and actually becomes, the focus of the interaction (see Figure 5).

The aim of the instructional process is to ensure that students learn. Insofar as that learning occurs for the majority of students at mastery levels, other matters become secondary. Some instructors are able to facilitate learning through personal charisma or modeling; others are more able to ensure that learning takes place through expert management of learning activities. In either case, the selection of a method is crucial. The essential issue is that the instructor's performance is the means to an end: the students' achievement of the performance objectives.

EVALUATION AND VALIDATION

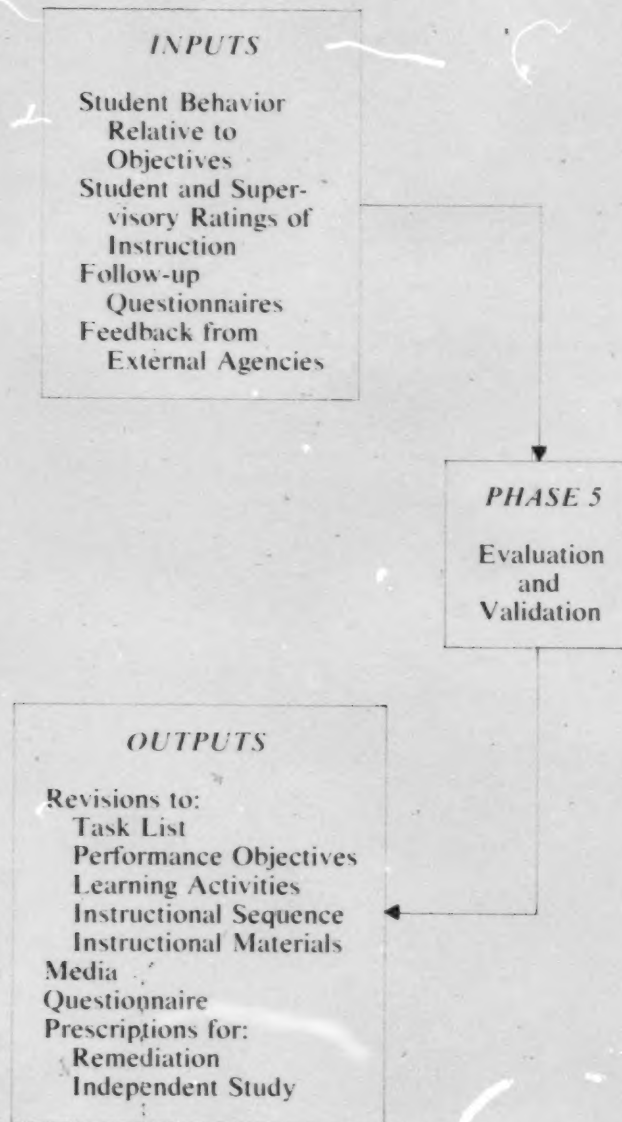
There are many purposes for evaluation. Two of the more important are to prescribe appropriate learning for individual students and to permit revision of the instructional system. The interaction of the evaluation and validation phase of the competency-based instructional model is shown in Figure 6.

The outputs of instruction are especially important. Only through evaluation can the teacher determine how well the performance objectives have been attained. Each module of instruction, or instructional package, requires the expenditure of considerable resources, and its effectiveness must be documented through a comprehensive evaluation program.

The following principles apply to the development of an accountable evaluation and validation program.

By definition, every performance objective contains a means of evaluation, and the student is given feedback on his performance and its impact on *his* learning. Formal written tests are not the vehicle for assessment in all cases. Nor is it necessary that all students meet every objective. The intent is to collect and document information about student learning. Any means that provides this information satisfies the evaluation requirement. In some cases the extent to which each student is evaluated on each objective depends on the availability of resources, including appropriate techniques to process the data. The advocate of competency-based instruction must constantly be moving toward comprehensive evaluation.

Figure 6. Evaluating and Validating



For assessment of instruction to become the prime means of instructional improvement it must be valid. That is, evaluation data

must be related to those performances the student can reasonably be expected to demonstrate during some later learning experience or on the job. Accordingly, the bases for evaluation must be performance objectives that are derived directly from the analysis of course requirements.

The primary means of validating the competency-based instructional system is to gather information on the student's actual performance in the subsequent phase of his learning, whether he is in the next course in the program or is employed. Feedback from such external evaluation permits decisions to be made concerning the appropriateness of performance objectives. Prime attention is directed to the periodic fine-tuning of the instructional program.

ASSUMPTIONS UNDERLYING COMPETENCY-BASED INSTRUCTION

Competency-based instruction challenges the long-held and presumably time-tested assumptions that have supported traditional classroom teaching. Examples of such assumptions include the following:

1. Only a few students in any class are capable of truly mastering the subject.
2. There is one standard format best for all students—a classroom of 25 to 30 students, seated in rows facing a blackboard, with one teacher doing most of the talking.
3. Traditional "instruction," consisting of little other than directed learning activities and periodic testing, is effective (or best) because it is almost universally practiced.

Do these three assumptions sound farfetched when stated so bluntly? Perhaps so. Yet they might very well be considered iron-clad laws since they have been so widely accepted. Indeed, has not education for the past century been almost universally practiced exactly as described in the foregoing assumptions? And, presumably, practice implies acceptance. It is the contention of competency-based instruction, however, that these assumptions tend to protect ineffective and unproductive teaching and justify high rates of student attrition and failure.

Instruction should be built on positive attitudes toward learners. To decry these apparent assumptions upon which education has previously been based is not to imply that any specific method of instruction is advocated. Rather, instruction should be designed to satisfy students' learning needs. What are the

assumptions around which effective community college teaching should be designed? Let's consider a few!

Perhaps the most basic assumption is that the aptitudes, achievements, backgrounds, and motivational levels of students in community college classrooms are the most diverse to be found in any educational setting in the world. In Texas last semester, we examined the reading ability of students in freshman English courses and found that, in any transfer English program, the levels ranged from Grade 4 to Grade 14. It seems evident then that no matter what type of group instruction might be used, it would probably be ineffective for 60 percent of these students.

Another belief is that people learn in different ways and at varying rates of speed. There is nothing new or unique about this finding, yet it is rarely acted on. Somehow instruction must accommodate individual differences, utilizing whatever learning assets the students bring with them. And there is no single best method for teaching all students.

The third principle, as we mentioned earlier, is that people learn best by doing—by active involvement, active participation in a learning process. Passivity is not conducive to changing student behavior. We've known that for fifty years and yet we continue to keep students in passive roles where they are sponges to soak up whatever the teacher is throwing out. Individualized instruction makes the student an active learner.

Yet another assumption has to do with content retention: a person will not retain what we teach unless it is relevant or essential to his life's activity. This is so obvious as to need no further elaboration.

We also find that previous student grades tell us little if anything regarding student competency. In other words, we don't know what the grades represent beyond the judgment of a teacher at some time. What does a B in English mean to you? What does a C in History represent? We don't know what skills have been measured because those grades are not tied to any kind of objective or discernible outcome.

A further assumption is that teaching is a science, requiring tools, technology, and specific skills on the part of the teacher. We know a great deal about motivating students and causing people to learn, but frankly most teachers have not been prepared for this kind of assignment in a community college.

Finally, we believe that learning, to be effective, needs to be targeted and purposeful to the student. There must be some focus or direction to the learning activity. Student and teacher alike become

more effective once the direction of learning activities is agreed upon.

These are elementary assumptions; yet they are crucial in designing and implementing successful learning activities for students in the community college.

Competency-based instruction accepts the learning assumptions held by John Carroll and Benjamin Bloom, who state that aptitude is "the amount of time required by the learner to attain mastery of a learning task" (Bloom, 1968). They envision mastery learning as theoretically available to the great majority of students if these students are provided sufficient time for learning and are given instruction appropriate to their individual learning needs and styles. The task of effective instruction, then, is to accommodate individual learning differences so that most students can acquire the skills, understanding, and attitudes that the instructor believes they should have (Roueche and Pitman, 1972). Inherent in this accommodation is the belief that standardized treatment of all students does not necessarily produce equal results for every student.

ROLE OF THE STUDENT

The student is aware of a course's objectives before actual instruction begins and should be allowed to contribute or add to these goals as the course work progresses. The student is often allowed to choose all or any segment of the instructional activities provided by a given department; just as the teacher has the freedom to select the teaching strategies with which he is most comfortable, so, too, should students be allowed to choose those learning activities which best suit their individual needs.

The student takes charge of his own learning; he studies at a rate, place, and time most convenient and effective for him. The student progresses only as rapidly as his ability to assimilate the information and master the objectives permits. Students achieve competence in a unit before they move to subsequent material. Most students attain mastery; some just move faster than others.

Whatever the individual differences among students might be, the student must become *involved* in his own learning. He is learning by doing, by manipulating materials, and by responding. He senses that a direction has been set, that he has the opportunity to avail himself of a variety of learning strategies, to continually evaluate what he is able to do, and to determine what he must yet do to complete assignments and meet the specific course criteria. In his relationship with the instructor, he can move in and out of a

dependent role. He can move in for information, encouragement, and support and can find reward for his accomplishments; he can move out into materials and into a variety of learning tasks that give him practice in developing his skills or help him remove his weaknesses in certain content areas.

In short, the student takes an active role in an instructional system that serves his needs, provides opportunities for success, and strengthens his self-concept or his confidence in his ability to master the course content. The role the student assumes is clearly the result of his perceiving that the instructor expects successful learning experience to occur.

ROLE OF THE INSTRUCTOR

The instructor has the skills to determine what student competencies are to be achieved and to develop learning strategies that will enable the student to succeed. He is a flexible resource who specializes in diagnosing learning problems and presenting appropriate learning strategies. His use of well-developed instructional materials helps free him from the routine and repetitive tasks of teaching content over and over again.

Central to the instructor's task is his revision of ineffective materials and improvement of all facets of his instruction. These efforts are clearly indications of his attempts to give integrity to his course and his grades. His course objectives and criterion-referenced testing—or evaluation procedures by which he measures them—indicate his intentions to effect honest communication with the students. By openly describing what an A, B, or C *means*, he maintains credibility with his students and shows that he has no "hidden agenda" or "trick or treat" test questions, that he has defined the competencies necessary in his course and can assign measurable performance levels to them.

An instructor's greatest teaching strategy, and one that competency-based instructional design promotes most effectively, is working with students in a humane manner. By being proficient in developing meaningful learning activities and materials and successfully encouraging student involvement with them, he is allowed more time to devote to student motivation, orientation, and personal contact. This time, spent in such supportive acts as daily, or reasonably frequent, monitoring of student work or giving an encouraging word at the right moment, *cannot be too heavily emphasized*. The instructor is a powerful influence in the life of the student and on his classroom behavior or performance. A student

can surely be directed and encouraged to relate to materials and strategies, but his opportunity to tap into the strengths that a caring, accepting person offers will unquestionably be the principal factor to which he will ultimately point as the real determinant of his success. This person encourages feelings in students that success is possible given sufficient time. It is the force responsible for strong, healthy, positive student attitudes; and it is these attitudes that give students the inner resources to attempt new, higher performance levels.

DOES IT WORK?

It works! Although colleges around the nation are in various stages of implementing the mastery learning concept, early indications confirm that student retention and achievement are being improved. Instructional developers are cognizant that students are experiencing success in learning content and performing various skills. And, contrary to the position taken by critics of competency-based instruction, the results have clearly demonstrated that it does not dictate teaching methods, does not impinge on professional academic freedom, and certainly does not limit or stifle the kinds or amounts of learning possible in any course. It does allow teachers to focus on the competencies desired and to revise them until instruction becomes more effective.

More important, perhaps, is the finding that students are developing better attitudes and feelings toward their educational experiences (Roueche and Kirk, 1973). Such improvement is the result of students' perceptions that instructors care about their success and that teachers are demonstrating this care by writing objectives and developing honest means of evaluation—evaluation stated in terms of criterion-referenced expectations and based on competency-based performance levels. The writing of objectives and the describing of competencies show the student that his instructor accepts the responsibility which accompanies any effective teaching role: he can describe and evaluate successful performance, and he is willing to provide an atmosphere that will stimulate and monitor this performance.

Competency-based instruction supports the premise that a student has a right to learn and that this right should not be violated through institutional or instructional failure to provide every possible avenue by which that learning might occur. Access to information and, thus, to the world should be a given; competency-based instruction is designed to offer uncomplicated means to this information as well as time to effect mastery.

This mode of instruction makes sense and provides positive direction for improved educational services to new clienteles. It offers hope that education can indeed accommodate individual differences.

SUMMARY

The competency-based instructional system is simply a means of linking student performance to institutional accountability. If at the end of an instructional program students can accomplish the tasks called for in the program, and if the program is designed to meet realistic external requirements, the instructional process must be judged successful. This precept is not a pie-in-the-sky conceptualization of twenty-first century educational technology—it is a concept borne out of the desire of the community college to deliver on its implied promise. On the other hand, competency-based instruction requires dedicated, task-oriented teaching teams who believe that it can and must be done. Once this spirit pervades an institution, the essence of Bloom's assumptions applies. All that is required are time, perseverance, and direction.

We have tried hard not to tie a particular method of teaching to the notion of competency-based instruction. We can easily see how group instruction might be most effective with certain kinds of students in appropriate settings. We do feel, however, that a variety of learning strategies is called for in community college settings and that each student should have opportunities to choose the strategies or methods best suited to him. In that individual needs are served by this approach, it could be argued that we are advocating individualized instruction. True enough!

CHAPTER 3

CURRICULAR DECISION MAKING: WHAT COMPETENCIES SHOULD BE TAUGHT

When one considers the "knowledge explosion," the fantastic rate at which research is producing new information, the decisions involved in designing curricula become overwhelming. "Realizing there is so much to be taught, so much that would be valuable for people to learn in a complex society such as ours, and so little time to learn, how do we decide what objectives are worth teaching?" (Tyler, 1968, p. 79). Thus the question, "What competencies should college students acquire as the end result of their participation in a competency-based instructional program?" becomes the focus of this chapter.

Before answering that question, however, a number of related considerations need to be discussed. For instance, how do curricular decisions differ from instructional decisions and who makes them? How are good curricular decisions made? And what conditions militate against good choices?

CURRICULUM VS. INSTRUCTION

Curricular concerns relate to those *ends* (competency levels) the instructor seeks to reach; instruction is the *means* to those ends. There is a growing body of data on teaching and community college instructors are exhibiting an increasing level of sophistication regarding instructional matters. Most teachers are aware that skills and knowledge can be effectively taught. Now, it behooves them to address the crucial question of what should be taught.

There is a high degree of subjectivity associated with curricular questions, since the selection of objectives is laden with value judgments. There is no known method of depersonalizing the curricular decision-making process, nor should there be. The final decision always rests with the instructor, even though others are involved.

WHO MAKES CURRICULUM DECISIONS?

Curriculum decisions are made by a variety of people and agencies, including faculty, students, administrators, employers, practitioners, experts (textbook writers, for example), and governance agencies (such as boards of trustees, accreditation associations, state legislatures, and federal agencies). The most important of these, however, is the individual faculty member. A comprehensive framework within which good curricular decisions can be made thus becomes an important tool for this person.

THE TYLER RATIONALE FOR CURRICULUM DECISIONS

Because curriculum decisions involve value judgments, a systematic approach to the task is difficult at best. Popham and Baker (1970, p. 48) set the stage for a consideration of the Tyler curriculum rationale as follows:

The distinction between ends and means is not difficult to make, and can help the teacher greatly in his instructional planning. For one thing, the decisions regarding objectives—the ends of instruction—almost always depend on value judgments about what the schools should teach—that is, what is important for the students to learn. Value judgments, however, should contribute only mildly, if at all, to decisions about how the objectives can best be attained. When goals are established, the efficiency of comparative instructional techniques, or means, can be evaluated empirically. As yet, systematic empirical verification of the quality of educational objectives is nearly impossible.

To ensure that curricular decision making is relevant, Tyler (1950) suggests three sources of objectives that are to be scrutinized through two screens.

Sources of objectives:

- Learner
- Society
- Subject matter

Screens:

- Psychology of learning
- Philosophy of education

Source One: The Learner. In order to make valid selections, information regarding the needs and characteristics of the learners must be available to the instructor. In Chapter One a case was made for adapting instruction to the full range of student characteristics—their abilities as well as their personal and learning variables. By analyzing these variables, generalizations can be made regarding appropriate content for instruction. For example, when discrepancies between present conditions and acceptable norms are uncovered, instruction should be focused on those conditions. The conditions might be related to the student's abilities (such as reading level), his personal characteristics (self-concept, for instance), or his learning style or rate.

Source Two: The Society. It is generally agreed that society has established schools as agencies to both preserve and enhance our culture. Having the preservation of the status quo and the enhancement of constructive change as dual purposes of education is certain to mean conflicts over what should be emphasized in the curriculum. These broad social aims are bountiful sources of educational objectives. An example of an objective derived from society is: The student will comprehend the relationship of man to his physical and social culture (see "A Set of Competencies" at the end of this chapter).

Source Three: The Subject Matter. In the community college the subject matter itself provides the most common source of goals. Instructors, holding a masters degree or doctorate in an academic discipline, or being skilled practitioners in a technical or vocational specialty, feel more than competent to select objectives for their courses. Their previous experience serves them well. Thus, the preponderance of objectives comes from this source, often to the near exclusion of the other two sources.

The tendency to try to include too much content in college courses seems to be nearly universal. Often, a hasty coverage of "all the material in the course" results in little competency development on the part of students. Thus, only those competencies that are deemed most important and have a reasonable chance of being achieved should be implemented. Tyler suggests screening the objectives and using only those which pass the screens.

Screen One: Psychology of Learning. Some objectives, although seemingly important, are nearly impossible to achieve given the constraints of limited time and teacher-student contact. A thorough

knowledge of the psychology of learning would enable the instructor to exclude such objectives from the course.

Screen Two: Philosophy of Education. Educators tend to be in general agreement on what schools as institutions established by society should do and what teachers as classroom leaders should do. What is done will usually be based on educators' beliefs, attitudes, and values (their philosophy of education). Those in decision-making positions, such as instructors selecting objectives, cannot avoid involving these beliefs and values. "They can only deal with them knowingly and explicitly. . . or unwittingly allow them to enter through the back door" (Bem, 1970, p. 2).

By systematically considering the three sources of objectives and the two screens one is able to make better curricular decisions than if he approached the task from "scratch." Tyler's curriculum rationale thus becomes a tool for selecting those competencies that should be the goals of a competency-based instructional program.

The development of curricula relevant to individual and societal needs is a must if the community college is to make good on the promise of the open door. Several factors that have historically militated against such development are illustrated in the following statements by Tyler (1975).

Many faculty members are primarily interested in knowledge for its own sake, not in its meaning and value to the nonspecialist. . . . Traditionally, higher education has been more a sorting process than an educating process. . . . Efforts at curriculum reform have suffered from the simplistic nature of the efforts.

Once these barriers have been overcome, and curricular decisions are made according to a sound framework like that proposed by Tyler, then the community college will begin to realize its potential as democracy's college.

A SET OF COMPETENCIES

Toward what ends should the programs of the community college be directed? The eight competencies listed below represent a set of institutional goals worthy of adoption by any postsecondary institution:

1. Demonstrate awareness of values and commitments.
2. Demonstrate ability to use and acquire knowledge.

3. Comprehend the artistic and aesthetic dimensions of culture.
4. Comprehend the relationship of man to his physical and social culture.
5. Demonstrate a deep knowledge of one field.
6. Demonstrate competency in communication.
7. Demonstrate ability to cooperate with others in formulating solutions to problems and taking action on them.
8. Demonstrate skills, attitudes, and knowledge required to successfully earn a living.

All course objectives and program goals should relate to one or more of these institutional competencies. An interesting exercise for community college instructors would be to specify which program goal and which institutional competency each of their course objectives promotes. A hierarchy should exist in which course objectives specifically designed to achieve program goals are in turn related to institutional competencies. This structure, along with a competency-based instructional delivery system to ensure attainment of the objectives, would constitute a giant step toward educational excellence. It is reassuring to note that a trend in this direction is already evident in community colleges today.

CHAPTER 4

CONCOMITANTS OF COMPETENCY-BASED INSTRUCTION

We have discussed the need for competency-based instruction, instructional means, and curricular ends. This basic system of teaching has a number of important concomitants, including humanism, the development of the student's personhood, concern for the adult learner, equality of educational opportunity, and educational accountability. Each of these topics is considered briefly in this final chapter.

HUMANISM

Some have charged that the competency-based instruction herein outlined is cold, impersonal, and inhumane. Nothing could be further from the truth. Is it more humane to be reading a library book alone in one's room than to be working with materials in a learning laboratory with a tutor nearby? Is it more humane to let students determine what's important on their own or to teach them how to do it, if that ability is of great importance to the instructor? Is it inhumane to strive to design effective instruction for all students? Is it inhumane to treat students as individuals? It is inconceivable that any instructor would take on the responsibilities outlined here as components of successful competency-based instruction if he were not first a genuine human being—one capable of care and concern for others. Teaching is "people" business, and caring is the essential quality of a successful instructor.

DEVELOPING STUDENT PERSONHOOD

In his paper "Learning for Mastery" Bloom cites the powerful affective consequence of mastery: "When the student has mastered a subject there are profound changes in his view of himself and of the outer world" (1968). The student takes a greater interest in the subject, begins to like it, and gains a feeling of control over part of his environment.

Mastery learning can have a potent effect on the student's self-concept.

Each person searches for positive recognition of his worth and he comes to view himself as adequate in those areas where he receives assurance of his competence or success. For a student to view himself in a positive way, he must be given many opportunities to be rewarded. Mastery and its public recognition provide the necessary reassurance and reinforcement to help the student view himself as adequate (Bloom, 1968).

The need for competency-based instruction leading to mastery learning takes on added significance when one considers the diverse clientele of the community college. The majority are students from low-income families, typically are members of various minority groups, and suffer from feelings of powerlessness, low self-concept, and general feelings of unworthiness. Strangely enough, the influx of low-achieving students into higher education is a fact that has been faced much more squarely in practice than in theory.

If the laudable goal of educating the "whole person" is to be taken seriously, then the student's self-concept must be a prime consideration. For the purposes of this discussion, the locus of control is used as a measure of student self-concept and refers to a person's expectations regarding his own ability to derive payoffs or success from his environment. If he perceives that he can control his own rewards, he is considered to have an internal (I) control expectancy. If he perceives that welfare, God, society, the system, or other uncontrollable forces determine his behavior, he is said to have an external (E) control expectancy.

Control expectancy clearly influences a variety of observable social behaviors that are critical to social welfare, including success in school. All of the research points in the same direction: people are handicapped by being oriented to an external locus of control. The prevailing belief is that it is desirable to move people, especially those who are not doing well in society, toward internal control.

Vital to the overall success of an educational program are the careful review and systematic analysis of the entire social-learning environment. The student who is socially inadequate—unable to succeed at school work—needs help from the teaching environment.

To become more self-directed and internal, the student must gain the personal strength to face at least three complex handicaps in

the greater society: (1) antisocial behaviors learned in early life; (2) broad and complex social settings that do not provide adequate or consistent feedback; (3) a social system which lacks a consistent and uniform set of mores or codes, with the result that moderate risk-taking and problem-solving skills are required in order to develop a functional set of appropriate social responses (Mink, 1970).

There is evidence to suggest that successful learning experiences can lead to positive shifts in the student's control expectancy from external to internal. Competency-based instruction leading to mastery learning can, in Bloom's opinion, be one of the more powerful sources of improved student mental health. Historically, the attention given by teachers to student self-concept has been less than adequate. There seems to be a reversal in progress today. Sound mental health for students is a goal not only of counselors but of community college instructors utilizing a competency-based approach to instruction.

THE ADULT LEARNER

American higher education has traditionally developed its curricula and instructional programs primarily for young, single, unemployed adults who devote their full time and attention to the pursuit of a college education. These students, however, no longer compose the majority; contemporary learners are older, more experienced adult students (Cross and Jones, 1972).

The number of undergraduates over twenty-five years of age in the United States continues to grow. The average age of community college students is approaching thirty. Yet little attention has been given to the special needs and characteristics of these older learners. Recognition of their presence in community college classrooms usually takes the form of comments by instructors regarding the excellence of the students—generally older—in the evening courses in contrast to the performance of students—generally younger—in the regular day program.

A growing literature is concerned with this older clientele. Many agencies, university extension divisions, colleges and boards of education have begun to amass information much more systematically about the age, sex, occupation, previous educational experience, and achievement of their adult students. In almost all cases where comparative results have been obtained, the adult student achieved as well as or better than his younger colleague. Such studies have been available for at least four decades (Kidd, 1973).

The results of research into learning and aging show that adults can learn efficiently. If the means by which they are invited to learn are geared to their own particular needs and interests, they often surpass their younger classmates. Although aging does influence intellectual and manual performance, this effect varies significantly from person to person. Generally speaking, the older people are, the greater are the differences among them, and thus the greater is the need for a competency-based approach to instruction and curriculum.

The main consideration in devising courses for adults is that they seem to learn best when they do not have to rely on memorizing. They should be permitted to work at their own pace with instructional materials that are relevant to their daily lives and that stress their own experiences. Adults who have been out of touch with learning can often improve their educational performance dramatically if they are helped by "learning to learn" (Rogers, 1971).

Worthy of consideration here is a theory of adult learning, formulated by Malcolm Knowles, based on at least four main assumptions that differ from those of pedagogy:

1. *Changes in self-concept.* Adult students see themselves as essentially self-directing.
2. *The role of experience.* An adult's experience is "who he is." Whenever an adult's experience is being devalued or ignored, he feels that not only his experience but his person is being rejected.
3. *Readiness to learn.* Learners are ready to learn those things they "need" to because of the developmental phases they are approaching in their roles as workers, spouses, parents, organizational members and leaders, leisure-time users, and the like.
4. *Orientation to learning.* The adult engages in an educational activity largely because he is experiencing some inadequacy in coping with current life problems. Because he wants to apply tomorrow what he learns today, he enters into education with a problem-centered orientation to learning. This assumption has major implications for the organization of the curriculum and its learning experiences (Knowles, 1973).

It is apparent that the main features of competency-based instruction are in line with these assumptions and the recommended

approaches to more effective adult education. Any educational design for the adult learner must give him the primary responsibility for learning.

EQUALITY OF EDUCATIONAL OPPORTUNITY

The concept of equal opportunity has good intentions. Unfortunately, it is too often viewed by those who need it most as a dreary platitude, or even as a downright sham, because they judge it by the harsh reality of results. How can equal opportunity possibly be realized educationally by exposing students from widely disparate cultural and socioeconomic backgrounds to standardized instruction?

Equal opportunity in education can be obtained only by achieving equity of results. Each student has to be viewed as a unique individual and must be accepted at whatever academic level he may have reached. He then requires individual attention, rather than common exposure, if he is to have an equal opportunity to attain specified program goals or institutional competencies.

Educators typically concentrate on the inputs and good intentions of their programs while professing an apparently vague concern about the outputs. Curiously, they do not consider their viewpoint irrelevant; rather, they suggest that because outputs are difficult to evaluate, it is better to concentrate on inputs (money, classrooms, space, teacher-student ratio) that can be quantified precisely. How many of these educators in strange terrain would trust a guide who did not know exactly where he wanted to go and always walked backward looking only at where he had been?

Some of the competencies acquired through education may be difficult to evaluate precisely, but that does not excuse ignoring others that can be assessed with an acceptable degree of accuracy. There is really only one critical measure of educational effectiveness, and that is student learning! Any attempt to focus on that overwhelmingly important output would be a giant step toward solving the crucial problems of American education. The fact that equal opportunity can be judged only by results implies that educational institutions must be evaluated, and held accountable, by how well they achieve equality of student learning through a competency-based approach to curriculum and instruction.

EDUCATIONAL ACCOUNTABILITY

The community college is a multiphase institution with a unique potential for meeting the needs of nontraditional students. It can

never be successful, however, unless the faculty, administrators, and governing officials agree with and implement stated program goals and institutional competencies. The ideals of accountability and equal opportunity require modifications in traditional education practices. The faculty may be the key element in effecting change, but instructors cannot be held accountable unless the total institution is dedicated to that end. A sincere endorsement of accountability must pervade all sectors of the college and the community.

Trustees and administrators must become educational leaders, not only by establishing policies and procedures that encourage and reward successful teachers, but by creating a climate in which all college members are willing to be accountable. In a general sense, accountability means that the public, board of trustees, administrators, instructors, and students are mutually for the attainment of the goals of the institution.

The college leadership must accept the responsibility for establishing institutional styles that make the college accountable. Students should be able to enter the college, find a program that is consistent with their needs, remain in college until competencies are acquired, and then become contributing members of society.

We have entered "the age of accountability in education" and are obliged to examine our purposes to see that the needs of our clients are met by making education answerable to society. Rather than respond defensively by considering accountability a threat, we should accept it positively as a professional responsibility and a commonly accepted ethic that is taken for granted in most professions. Equal opportunity will never be realized unless educators are willing to respond to society's urgent needs. Community colleges cannot be operated as ends in themselves.

The recent widespread concern about accountability in education has met with resistance from instructional personnel. This reaction is understandable when one considers that the emphasis to date has been on the accountability of personnel and programs, and rarely have accountability concepts been applied to administrators, boards of trustees, legislators, and the public in general. Accountability provides evidence that prespecified student learning has occurred and that the money, time, and effort expended have produced the desired results. The main focus has been on student achievement as the prime measure of instructor competence. It is no wonder that teachers have reacted negatively to accountability and have seen it as a serious threat to them personally. Too much demand for accountability has been made on

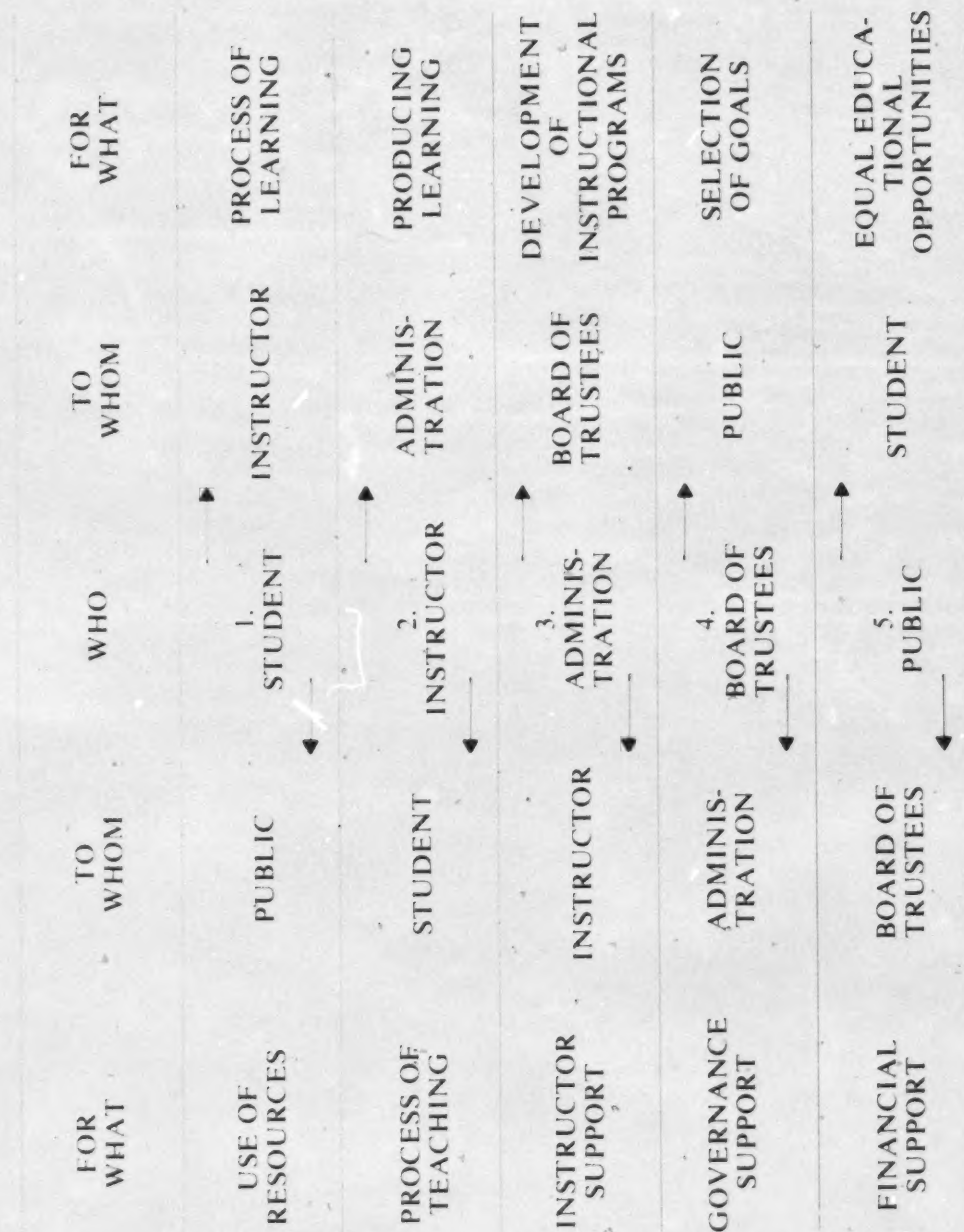
the instructor to the exclusion of other members of the college community. The accountability model proposed here (see Figure 7) views the process as a two-way street for the five constituents of the college community. It is an adaption of the model developed by Alkin and answers the question, "Who is accountable to whom and for what?" (Alkin, 1972).

The salient features of this model are the following:

1. *The student* is accountable to his instructor for the serious pursuit of learning and also to the public who provides him the educational opportunity for the efficient use of resources.
2. *The instructor* is accountable to the administration for causing learning and also to the student for the process of teaching.
3. *The administration* is accountable to the board of trustees for the development of the instructional programs and also to the instructor for the necessary support of the instructional process.
4. *The board of trustees* is accountable to the public for the selection of the educational goals of the institution and also to the administration for governance support.
5. *The public* is accountable to the students for providing equality of educational opportunities and also to the board of trustees for the financial support needed to operate the college.

The adoption of this model (Herrscher, 1975) will remove the threat felt by most instructional personnel from current models and will make abundantly clear to all members of the college community their roles and responsibilities in achieving educational accountability. We see competency-based instruction as the vital link in the accountability chain. When the curriculum and the instructional delivery system are designed in a rational manner, accountability seems to be the appropriate umbrella for all educational endeavors.

Figure 7. An Accountability Model



SUMMARY

Self-serving, elitist attitudes do not belong in an educational movement that has been blessed with a democratic heritage expressed in the philosophy of the open door. Rather than seeking ways to prevent alienated and heretofore unproductive students from having a chance to become contributing members of society, community colleges must be conceiving more imaginative programs to recruit, counsel, and instruct students, thus extending educational opportunity to all citizens. Even if geographic and financial barriers to postsecondary education could be eliminated, racial minorities, women, and children from lower socioeconomic classes would still be represented poorly. These groups contain essential human talents even though as potential students they may be poorly motivated. Active efforts are necessary to design curricula and instructional programs on a competency base so these students, who need education most desperately, can be successful. Then, the community college will have made good on the promise of the open door. Competency-based instruction provides the mechanism necessary to implement the democratic and humanitarian philosophy stated so boldly by "democracy's colleges."

GLOSSARY

Accountability. The ability to show that one has done what he said he would do. Because *evidence* of accomplishment is required, it is best described as responsibility plus documentation.

Competency-Based Instruction. Instruction that requires students to demonstrate in the classroom the kinds of skills, knowledges, and other abilities that are likely to be required of him at some later time: in a later course, or on the job following graduation.

Criterion-Referenced Measurement. The process of using a preselected criterion or standard as the reference point for making judgments about student competence. This term means that the standard (criterion) is the student performance called for in the performance objective.

Evaluative Information. That information collected for the purpose of assessing performance of students, conduct of instruction, support of instruction, or any other aspect of the instructional process.

Formative Evaluation. A type of evaluation covering a short segment of instruction. This kind of testing does not usually result in the assignment of a grade. It is an integral part of the learning process that gives the student information about his progress or his difficulties. The instructor uses the information to make appropriate revisions in the lesson material or intervene in some other way to remedy student deficiencies while the course is in progress.

Instructional Strategies. The total plan for bringing resources to bear in the learning process. It includes choices about the broad methods of instruction such as lecture, case study, and so on, as well as more detailed structuring of the lesson presentation. The latter would include decisions about whether the material to be learned should be arranged for application of concepts, problem-solving exercises, or perhaps making a fixed sequence of responses. It also includes the type of student grouping and selection of appropriate media.

Learning Activity. The directed events in which students engage in order to acquire the abilities called for by performance objectives.

Learning or Performance Objectives. Descriptions of what the learner will be able to do after instruction. Learning or performance objectives include the standards which describe satisfactory performance and the conditions under which the performance will occur.

Mastery Learning. An educational concept that states that given sufficient time and appropriate instruction, nearly all students assigned to a course can learn nearly all the tasks included in the instructional program.

Media. Means of communication that promote learning, such as simple sound equipment or visual devices, films, television, three-dimensional models, and simulators.

Norm-Referenced Measurement. The process of evaluating individuals by using as the standard (or criterion) the average performance of the group from which the individuals are drawn. Usually, the greater the amount by which an individual exceeds the group average, the more favorable are the judgments about his performance.

Outcomes. The end results of the instructional process. They are the skills, abilities, or other competencies that have been acquired by the students.

Sequencing. Arranging the lessons, objectives, instructional strategies, and learning activities to ensure presentation of material in a logical order for effective learning.

Summative Evaluation. Testing which occurs at the end of a course, sub-course, or block of instruction to provide information about student mastery of major objectives. May be used to assign grades or to certify that students possess the competencies described in the objectives.

Systematic Design. Systematic instructional design is simply a logical, orderly process for deciding what will be taught, and in what manner, in order to produce specified instructional outcomes. These outcomes, in turn, must be evaluated by some means in order to make decisions for further improving the instruction. It involves thinking of the educational process as a whole rather than in isolated pieces.

Tests. A means for collecting information about student learning. Tests may call for written responses by students, or they may be conducted less formally employing devices such as checklists and sampling techniques. Any means that permits an instructor to assess the aspect of student performance called for by a performance objective may be properly construed as a test.

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